^{81}Ga β^- decay (1.219 s) 1981Ho24

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 199,271 (2025)	1-Sep-2024

Parent: ^{81}Ga: E=0; J$^\pi$=5/2$^{(-)}$; $T_{1/2}$=1.219 s *5*; Q(β^-)=8664 *4*; %β^- decay=100

^{81}Ga-J$^\pi$,$T_{1/2}$: from ^{81}Ga Adopted Levels.

^{81}Ga-Q(β^-): from 2021Wa16.

Also 1980HoZN, Eγ, Iγ and $\gamma\gamma$ coin data used in 1981Ho24 are tabulated.

Others: 1981Al20, 1981Ho07, 1990Ru05.

Source: ^{81}Ga from mass-separated fission products.

1981Ho24, 1980HoZN: singles γ and $\gamma\gamma$-coincidences measured with Ge(Li); x-ray detector for low energy γ search (E$\gamma\geq$15 keV); Si(Li) detector for simultaneous measurement of ce and γ spectra for α(K)exp determination.

^{81}Ge Levels

E(level)[†]	J$^\pi$[#]	$T_{1/2}$[‡]	Comments
0	(9/2$^+$)	6.4 s *2*	$T_{1/2}$: from Adopted Levels. In 1981Ho24, 7.6 s *6* – same value as of the 1st excited state. See the footnote.
679.14 *4*	(1/2$^+$)	7.6 s *6*	E(level): 710 *310* from difference in measured β endpoint energies for various γ(^{81}As)-gated β(^{81}Ge) spectra for ^{81}Ge g.s. and isomeric state decays (1981Al20). γ-ray decay intensity <1 per 100 isomeric decays (1981Ho24).
711.207 *23*	(5/2$^+$)	3.9 ns *2*	
895.63 *4*	(1/2$^-$)	<0.5 ns	
1241.44 *3*	(1/2$^+$,3/2,5/2$^+$)		
1286.466 *23*	(5/2$^+$,7/2$^-$)		
1303.23 *3*	(5/2$^+$,7/2,9/2$^+$)		
1409.93 *4*			
1548.505 *24*	(5/2$^+$,7/2)		
1577.02 *11*			
1723.97 *3*	(3/2$^-$,5/2$^-$)		
1731.04 *4*	(5/2$^+$,7/2)		
1805.54 *7*	(5/2$^+$,7/2)		
1816.23 *5*	(3/2$^-$)		
1832.23 *4*	(3/2$^-$,5/2$^-$)		
1855.34 *5*			
2138.38 *4*	(5/2$^+$,7/2)		
2174.87 *7*			
2419.90 *4*			
2529.30 *5*	(3/2,5/2$^-$)		
2549.97 *11*	(5/2$^+$,7/2)		
2563.18 *5*	(3/2,5/2$^-$)		
2693.67 *10*			
2996.71 *3*	(3/2$^-$,5/2$^-$,7/2$^-$)		
3021.39 *6*	(3/2,5/2$^-$)		
3129.05 *5*	(3/2,5/2,7/2)		
3437.23 *4*	(3/2$^-$,5/2$^-$)		
3503.08 *4*	(7/2$^-$)		
3665.56 *8*	(7/2$^-$)		
3697.95 *10*	(7/2)		
3772.88 *4*	(7/2$^-$)		
3820.15 *19*	(3/2,5/2,7/2)		
4012.91 *4*	(3/2$^-$,5/2$^-$,7/2$^-$)		
4035.31 *7*	(7/2$^-$)		
4168.17 *5*	(3/2$^-$)		
4276.77 *16*	(3/2,5/2,7/2)		
4470.53 *20*	(7/2$^-$)		

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^{81}Ga β^- decay (1.219 s) 1981Ho24 (continued)

^{81}Ge Levels (continued)

E(level)[†]	Comments
4827.7+x	E(level): from S(n)=4827.7 *29* (^{81}Ge) and x<3836 *5* [from Q(β^-) (^{81}Ga=8664 *4*)-S(n)(^{81}Ge) (2021Wa16)].

[†] From least-squares fit to Eγ, omitting Eγ for uncertain or doubly-placed lines and for lines whose Eγ deviates from least-squares adjusted value by at least 3σ (991γ, 1941γ, 2436γ and 2955γ).

[‡] From 1981Ho24, except where otherwise noted, based on analysis of ^{81}Ga decay and $\beta\gamma$ coin measurements, it is evident that there are two β^- decaying isomers in ^{81}Ge (g.s. and 1st excited state) but, in multispectrum analysis of mass number 81, it was not possible to differentiate between the two half-lives. Hence, 1981Ho24 conclude that the isomers (g.s. and 1st excited state) possess similar $T_{1/2}$ values.

[#] From Adopted Levels.

β^- radiations

Q(β^-)=8320 *150* (1981Al20), based on Eβ(max) for eight $\gamma\beta$ coin spectra.
Measured average Eβ=2240 *20* (1990Ru05).
β^- av Eβ: Additional information 1.

E(decay)[†]	E(level)	Iβ^-[‡#]	Log *ft*	Comments
(1.9×10^3[&] *19*)	4827.7+x	11.8 *8*	4.6	av Eβ=1675.8 Iβ^-: from %β^-n=11.8 *8* in ^{81}Ga g.s. Adopted Levels.
(4194 *4*)	4470.53	0.87 *9*	5.864 *45*	av Eβ=1847.5 *19* E(decay): β endpoint: 4150 *960* (1981Al20).
(4387 *4*)	4276.77	0.36 *5*	6.34 *6*	av Eβ=1940.8 *19*
(4496 *4*)	4168.17	7.0 *5*	5.094 *31*	av Eβ=1993.2 *19* E(decay): β endpoint: 4400 *380* (1981Al20).
(4629 *4*)	4035.31	2.42 *22*	5.612 *40*	av Eβ=2057.3 *19* E(decay): β endpoint: 4170 *490* (1981Al20).
(4651 *4*)	4012.91	8.6 *6*	5.071 *30*	av Eβ=2068.1 *19* E(decay): β endpoint: 4460 *510* (1981Al20).
(4844 *4*)	3820.15	0.63 *10*	6.29 *7*	av Eβ=2161.2 *19*
(4891 *4*)	3772.88	5.8 *4*	5.34 *3*	av Eβ=2184.0 *19*
(4966 *4*)	3697.95	1.13 *11*	6.080 *42*	av Eβ=2220.2 *19*
(4998 *4*)	3665.56	2.35 *21*	5.775 *39*	av Eβ=2235.8 *19*
(5161 *4*)	3503.08	7.8 *6*	5.317 *33*	av Eβ=2314.4 *19* E(decay): others: 4580 *520* and 4850 *590* − measured values in 1981Al20.
(5227 *4*)	3437.23	6.1 *5*	5.448 *36*	av Eβ=2346.3 *19* E(decay): β endpoint: 5100 *340* (1981Al20).
(5535 *4*)	3129.05	0.94 *8*	6.373 *37*	av Eβ=2495.4 *19*
(5643 *4*)	3021.39	1.13 *12*	6.331 *46*	av Eβ=2547.4 *19*
(5667 *4*)	2996.71	6.9 *7*	5.554 *44*	av Eβ=2559.4 *19* E(decay): β endpoint: 5200 *290* (1981Al20).
(5970 *4*)	2693.67	0.65 *7*	6.683 *47*	av Eβ=2706.1 *19*
(6101 *4*)	2563.18	2.44 *18*	6.152 *32*	av Eβ=2769.3 *19*
(6114 *4*)	2549.97	0.73 *7*	6.680 *42*	av Eβ=2775.7 *19*
(6135 *4*)	2529.30	1.50 *12*	6.374 *35*	av Eβ=2785.8 *19*
(6489 *4*)	2174.87	0.40 *4*	7.060 *43*	av Eβ=2957.5 *19*
(6526 *4*)	2138.38	0.91 *13*	6.71 *6*	av Eβ=2975.2 *19*
(6809 *4*)	1855.34	0.39 *4*	7.167 *45*	av Eβ=3112.4 *19*
(6832 *4*)	1832.23	1.9 *5*	6.49 *11*	av Eβ=3123.6 *19*
(6848 *4*)	1816.23	1.68 *14*	6.544 *36*	av Eβ=3131.4 *19*
(6859 *4*)	1805.54	0.98 *9*	6.781 *40*	av Eβ=3136.5 *19*
(6933 *4*)	1731.04	1.09 *15*	6.76 *6*	av Eβ=3172.7 *19*

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^{81}Ga β^- decay (1.219 s) 1981Ho24 (continued)

β^- radiations (continued)

E(decay)†	E(level)	Iβ^-‡#	Log *ft*	Comments
(6940 *4*)	1723.97	4.0 *13*	6.19 *14*	av Eβ=3176.1 *19*
(7087 *4*)	1577.02	0.26 *6*	7.42 *10*	av Eβ=3247.3 *19*
(7116 *4*)	1548.505	2.18 *25*	6.51 *5*	av Eβ=3261.1 *19*
(7254 *4*)	1409.93	0.54 *11*	7.15 *9*	av Eβ=3328.3 *19*
(7361 *4*)	1303.23	0.24 *14*	7.53 *25*	av Eβ=3380.1 *19*
(7378 *4*)	1286.466	3.3 *5*	6.40 *7*	av Eβ=3388.2 *19*
(7768@ *4*)	895.63	2.1 *19*	8.87 *39*	av Eβ=3571.8 *19*
(7953 *4*)	711.207	3.6 *9*	6.51 *11*	av Eβ=3667.1 *19*
(7985@ *4*)	679.14	≤5.1	≥8.6^{1u}	av Eβ=3676.8 *19*
(8664@ *4*)	0	≤8.7	≥8.6^{1u}	av Eβ=4006.4 *19*

† From Q(β^-) and E(level). Measured endpoint energies from 1981Al20 are given in comments.
‡ From intensity imbalance, except as noted. Iβ(g.s.) and Iβ(679 level) are deduced to be ≤7.7% and ≤5.1%, respectively, under the assumption that log $f^{1u}t$≥8.5.
# Absolute intensity per 100 decays.
@ Existence of this branch is questionable.
& Estimated for a range of levels.

$\gamma(^{81}Ge)$

Iγ normalization: from [Σ(I(γ+ce) to g.s.)+Σ(I(γ+ce) to 679 level)]=[100−(% delayed n)-%Iβ(g.s.)-%Iβ(679)]=81 *5*, assuming %β^-n=11.8 *8* (from ^{81}Ga Adopted Levels). Iβ(to g.s.)=4.4 *44* and Iβ(to 679 level)=2.6 *26* (<8.7% and <5.1%, respectively, based on log $f^{1u}t$>8.5), are overlapping zero.

Measured average Eγ=2730 *30* (1990Ru05).

E_γ [†]	I_γ [†c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.	α [b]	Comments
216.47 *3*	100 *4*	895.63	(1/2$^-$)	679.14	(1/2$^+$)	E1	0.00692 *10*	%Iγ=36.7 *24* α(K)exp=0.0066 *20* (1981Ho24) α(K)=0.00619 *9*; α(L)=0.000634 *9*; α(M)=9.43×10^{-5} *13* α(N)=6.01×10^{-6} *8* %Iγ=36.7 *25* assuming recommended decay-scheme normalization. I(216γ)/I(delayed n)=2.9 *2* (1981Ho07). Mult.: from α(K)(exp) in 1981Ho24.
256.6 *3*	0.45 *9*	1805.54	(5/2$^+$,7/2)	1548.505	(5/2$^+$,7/2)			%Iγ=0.165 *35*
262.03 *4*	0.76 *5*	1548.505	(5/2$^+$,7/2)	1286.466	(5/2$^+$,7/2$^-$)			%Iγ=0.279 *26*
437.42 *4*	0.44 *3*	1723.97	(3/2$^-$,5/2$^-$)	1286.466	(5/2$^+$,7/2$^-$)			%Iγ=0.162 *15*
482.51 *3*	8.9 *5*	1723.97	(3/2$^-$,5/2$^-$)	1241.44	(1/2$^+$,3/2,5/2$^+$)			%Iγ=3.27 *28*
501.90 *17*	0.94 *10*	1805.54	(5/2$^+$,7/2)	1303.23	(5/2$^+$,7/2,9/2$^+$)			%Iγ=0.35 *4*
530.22 *4*	12.0 *6*	1241.44	(1/2$^+$,3/2,5/2$^+$)	711.207	(5/2$^+$)			%Iγ=4.4 *4*
562.37 *5*	1.98 *10*	1241.44	(1/2$^+$,3/2,5/2$^+$)	679.14	(1/2$^+$)			%Iγ=0.73 *6*
574.83 *5*	2.32 *16*	1816.23	(3/2$^-$)	1241.44	(1/2$^+$,3/2,5/2$^+$)			%Iγ=0.85 *8*
613.89 *4*	0.65 *5*	1855.34		1241.44	(1/2$^+$,3/2,5/2$^+$)			%Iγ=0.239 *24*
626.36 *6*	0.60 *5*	2174.87		1548.505	(5/2$^+$,7/2)			%Iγ=0.220 *23*
698.69 *3*	4.5 *2*	1409.93		711.207	(5/2$^+$)			%Iγ=1.65 *13*
711.19 *3*	47 *2*	711.207	(5/2$^+$)	0	(9/2$^+$)	[E2]	8.42×10^{-4} *12*	%Iγ=17.3 *13* α(K)=0.000751 *11*; α(L)=7.79×10^{-5} *11*; α(M)=1.161×10^{-5} *16* α(N)=7.51×10^{-7} *11*
728.32 *6*	1.60 *14*	2138.38	(5/2$^+$,7/2)	1409.93				%Iγ=0.59 *6*
730.84 *5*	2.55 *12*	2563.18	(3/2,5/2$^-$)	1832.23	(3/2$^-$,5/2$^-$)			%Iγ=0.94 *8*
776.21 *4*	3.5 *2*	3772.88	(7/2$^-$)	2996.71	(3/2$^-$,5/2$^-$,7/2$^-$)			%Iγ=1.29 *11*
805.32 *5*	1.99 *10*	2529.30	(3/2,5/2$^-$)	1723.97	(3/2$^-$,5/2$^-$)			%Iγ=0.73 *6*
828.26 *5*	59 *3*	1723.97	(3/2$^-$,5/2$^-$)	895.63	(1/2$^-$)			%Iγ=21.7 *18*
865.81 *10*	2.00 *12*	1577.02		711.207	(5/2$^+$)			%Iγ=0.73 *7*
920.7 *3*	0.3 *1*	1816.23	(3/2$^-$)	895.63	(1/2$^-$)			%Iγ=0.11 *4*
933	0.5	2174.87		1241.44	(1/2$^+$,3/2,5/2$^+$)			%Iγ=0.184 *12*
936.62 *4*	25.6 *11*	1832.23	(3/2$^-$,5/2$^-$)	895.63	(1/2$^-$)			%Iγ=9.4 *7*
962.64 *11*	1.08 *7*	2693.67		1731.04	(5/2$^+$,7/2)			%Iγ=0.40 *4*

γ(^{81}Ge) (continued)

E_γ[†]	I_γ[†c]	E_i(level)	J_i^π	E_f	J_f^π	Comments
991.06[&] *7*	1.81 *12*	4012.91	(3/2⁻,5/2⁻,7/2⁻)	3021.39	(3/2,5/2⁻)	%Iγ=0.67 *6*
1016.42 *14*	2.5 *3*	4012.91	(3/2⁻,5/2⁻,7/2⁻)	2996.71	(3/2⁻,5/2⁻,7/2⁻)	%Iγ=0.92 *13*
1019.80 *4*	6.6 *3*	1731.04	(5/2⁺,7/2)	711.207	(5/2⁺)	%Iγ=2.43 *19*
1083.22 *6*	2.22 *12*	3503.08	(7/2⁻)	2419.90		%Iγ=0.82 *7*
1104.93 *9*	1.14 *10*	1816.23	(3/2⁻)	711.207	(5/2⁺)	%Iγ=0.42 *5*
1116.63 *5*	3.2 *2*	2419.90		1303.23	(5/2⁺,7/2,9/2⁺)	%Iγ=1.18 *11*
1137.07 *4*	1.83 *9*	1816.23	(3/2⁻)	679.14	(1/2⁺)	%Iγ=0.67 *5*
1144	0.4	1855.34		711.207	(5/2⁺)	%Iγ=0.147 *10*
1164.53 *3*	3.5 *2*	2996.71	(3/2⁻,5/2⁻,7/2⁻)	1832.23	(3/2⁻,5/2⁻)	%Iγ=1.29 *11*
1189.16 *6*	1.59 *9*	3021.39	(3/2,5/2⁻)	1832.23	(3/2⁻,5/2⁻)	%Iγ=0.58 *5*
[x]1203.17 *15*	0.51 *5*					%Iγ=0.187 *22*
1272.71 *3*	18.0 *9*	2996.71	(3/2⁻,5/2⁻,7/2⁻)	1723.97	(3/2⁻,5/2⁻)	%Iγ=6.6 *5*
1286.39 *3*	16.2 *8*	1286.466	(5/2⁺,7/2⁻)	0	(9/2⁺)	%Iγ=6.0 *5*
1303.20 *3*	4.8 *3*	1303.23	(5/2⁺,7/2,9/2⁺)	0	(9/2⁺)	%Iγ=1.76 *16*
[x]1339.83 *12*	1.01 *8*					%Iγ=0.37 *4*
1352.87 *7*	3.4 *2*	3772.88	(7/2⁻)	2419.90		%Iγ=1.25 *11*
1405.07 *4*	2.57 *14*	3129.05	(3/2,5/2,7/2)	1723.97	(3/2⁻,5/2⁻)	%Iγ=0.94 *8*
1448.25 *7*	1.37 *9*	2996.71	(3/2⁻,5/2⁻,7/2⁻)	1548.505	(5/2⁺,7/2)	%Iγ=0.50 *5*
1483.45 *12*	0.78 *5*	4012.91	(3/2⁻,5/2⁻,7/2⁻)	2529.30	(3/2,5/2⁻)	%Iγ=0.287 *26*
1548.51 *3*	13.0 *5*	1548.505	(5/2⁺,7/2)	0	(9/2⁺)	%Iγ=4.8 *4*
1604.93 *7*	1.48 *8*	3437.23	(3/2⁻,5/2⁻)	1832.23	(3/2⁻,5/2⁻)	%Iγ=0.54 *5*
1633.47 *9*	2.35 *13*	2529.30	(3/2,5/2⁻)	895.63	(1/2⁻)	%Iγ=0.86 *7*
1667.61 *6*	2.60 *14*	2563.18	(3/2,5/2⁻)	895.63	(1/2⁻)	%Iγ=0.96 *8*
1671.4 *4*	0.34 *8*	3503.08	(7/2⁻)	1832.23	(3/2⁻,5/2⁻)	%Iγ=0.125 *31*
1710.2 *2*	2.0 *7*	2996.71	(3/2⁻,5/2⁻,7/2⁻)	1286.466	(5/2⁺,7/2⁻)	%Iγ=0.73 *26*
1713.26 *4*	10.3 *4*	3437.23	(3/2⁻,5/2⁻)	1723.97	(3/2⁻,5/2⁻)	%Iγ=3.79 *29*
1730.95 *7*	1.47 *8*	1731.04	(5/2⁺,7/2)	0	(9/2⁺)	%Iγ=0.54 *5*
[x]1770.52 *11*	0.44 *5*					%Iγ=0.162 *21*
1779.05 *3*	5.1 *3*	3503.08	(7/2⁻)	1723.97	(3/2⁻,5/2⁻)	%Iγ=1.87 *16*
1805.61 *7*	1.29 *8*	1805.54	(5/2⁺,7/2)	0	(9/2⁺)	%Iγ=0.47 *4*
1818.15 *7*	0.52 *4*	2529.30	(3/2,5/2⁻)	711.207	(5/2⁺)	%Iγ=0.191 *19*
1852.37 *15*	1.49 *12*	2563.18	(3/2,5/2⁻)	711.207	(5/2⁺)	%Iγ=0.55 *6*
1874.36 *9*	2.92 *16*	4012.91	(3/2⁻,5/2⁻,7/2⁻)	2138.38	(5/2⁺,7/2)	%Iγ=1.07 *9*
1940.97[&] *6*	2.94 *15*	3772.88	(7/2⁻)	1832.23	(3/2⁻,5/2⁻)	%Iγ=1.08 *9*
1955.61[d#]	1.5[d]	3503.08	(7/2⁻)	1548.505	(5/2⁺,7/2)	%Iγ=0.55 *4* E_γ: 1955.61 *7* for doublet.
1955.61[d#]	1[d]	3772.88	(7/2⁻)	1816.23	(3/2⁻)	%Iγ=0.367 *24* E_γ: 1955.61 *7* for doublet.
1982.4 *2*	0.70 *10*	2693.67		711.207	(5/2⁺)	%Iγ=0.26 *4*
2041.62 *9*	1.49 *9*	3772.88	(7/2⁻)	1731.04	(5/2⁺,7/2)	%Iγ=0.55 *5*
2049.61[ae] *9*	1.43 *10*	3772.88	(7/2⁻)	1723.97	(3/2⁻,5/2⁻)	%Iγ=0.53 *5*

γ(^{81}Ge) (continued)

E_γ [†]	I_γ [†c]	E_i(level)	J^π_i	E_f	J^π_f	Comments
2095.6 5	0.6 2	3820.15	(3/2,5/2,7/2)	1723.97	(3/2⁻,5/2⁻)	%Iγ=0.22 7
2116.6 2	0.67 10	3665.56	(7/2⁻)	1548.505	(5/2⁺,7/2)	%Iγ=0.25 4
2125.69 11	2.79 18	3021.39	(3/2,5/2⁻)	895.63	(1/2⁻)	%Iγ=1.03 9
2138.39 5	3.8 2	2138.38	(5/2⁺,7/2)	0	(9/2⁺)	%Iγ=1.40 12
2180.66 4	6.7 4	4012.91	(3/2⁻,5/2⁻,7/2⁻)	1832.23	(3/2⁻,5/2⁻)	%Iγ=2.46 22
2216.24 15	1.48 12	3503.08	(7/2⁻)	1286.466	(5/2⁺,7/2⁻)	%Iγ=0.54 6
2271.7 2	1.12 11	3820.15	(3/2,5/2,7/2)	1548.505	(5/2⁺,7/2)	%Iγ=0.41 5
2281.72 11	2.54 14	4012.91	(3/2⁻,5/2⁻,7/2⁻)	1731.04	(5/2⁺,7/2)	%Iγ=0.93 8
2288.58 14	1.98 10	4012.91	(3/2⁻,5/2⁻,7/2⁻)	1723.97	(3/2⁻,5/2⁻)	%Iγ=0.73 6
2311.14[d@]	0.5[d]	3021.39	(3/2,5/2⁻)	711.207	(5/2⁺)	%Iγ=0.184 12 E_γ: 2311.14 19 for doublet.
2311.14[d@] 19	1[d]	4035.31	(7/2⁻)	1723.97	(3/2⁻,5/2⁻)	%Iγ=0.367 24
2335.75 13	1.28 9	4168.17	(3/2⁻)	1832.23	(3/2⁻,5/2⁻)	%Iγ=0.47 5
[x]2343.15 16	0.50 6					%Iγ=0.184 25
2362.91 14	1.44 14	3772.88	(7/2⁻)	1409.93		%Iγ=0.53 6
2379.0 4	1.5 3	3665.56	(7/2⁻)	1286.466	(5/2⁺,7/2⁻)	%Iγ=0.55 12
2419.94 15	2.00 16	2419.90		0	(9/2⁺)	%Iγ=0.73 8
2436.54[&] 15	1.30 9	4012.91	(3/2⁻,5/2⁻,7/2⁻)	1577.02		%Iγ=0.48 5
2444.15 4	15.0 5	4168.17	(3/2⁻)	1723.97	(3/2⁻,5/2⁻)	%Iγ=5.5 4
2464.67 12	1.92 14	4012.91	(3/2⁻,5/2⁻,7/2⁻)	1548.505	(5/2⁺,7/2)	%Iγ=0.71 7
2541.39 11	1.96 14	3437.23	(3/2⁻,5/2⁻)	895.63	(1/2⁻)	%Iγ=0.72 7
2549.93 11	2.00 14	2549.97	(5/2⁺,7/2)	0	(9/2⁺)	%Iγ=0.73 7
2552.76 15	0.98 10	4276.77	(3/2,5/2,7/2)	1723.97	(3/2⁻,5/2⁻)	%Iγ=0.36 4
[x]2650.35 16	1.08 10					%Iγ=0.40 4
2726.11 9	2.79 14	3437.23	(3/2⁻,5/2⁻)	711.207	(5/2⁺)	%Iγ=1.03 8
[x]2754.77 26	1.49 15					%Iγ=0.55 7
2771.85 16	0.88 9	4012.91	(3/2⁻,5/2⁻,7/2⁻)	1241.44	(1/2⁺,3/2,5/2⁺)	%Iγ=0.32 4
2792.02 12	1.81 15	3503.08	(7/2⁻)	711.207	(5/2⁺)	%Iγ=0.67 7
[x]2845.8 3	0.93 14					%Iγ=0.34 6
2881.6 3	0.93 16	4168.17	(3/2⁻)	1286.466	(5/2⁺,7/2⁻)	%Iγ=0.34 6
2922[‡]	0.2	4470.53	(7/2⁻)	1548.505	(5/2⁺,7/2)	%Iγ=0.073 5
2926.4 3	0.44 9	4168.17	(3/2⁻)	1241.44	(1/2⁺,3/2,5/2⁺)	%Iγ=0.162 35
2955.0[&] 2	1.26 15	3665.56	(7/2⁻)	711.207	(5/2⁺)	%Iγ=0.46 6
2986.4 2	1.41 17	3697.95	(7/2)	711.207	(5/2⁺)	%Iγ=0.52 7
[x]3061.7 2	0.98 12					%Iγ=0.36 5
[x]3169.22 19	0.24 5					%Iγ=0.088 19
3272.82 17	0.34 5	4168.17	(3/2⁻)	895.63	(1/2⁻)	%Iγ=0.125 20
[x]3448.64 19	1.13 10					%Iγ=0.42 5
3489.01 10	1.17 7	4168.17	(3/2⁻)	679.14	(1/2⁺)	%Iγ=0.43 4
3503.24 8	8.8 5	3503.08	(7/2⁻)	0	(9/2⁺)	%Iγ=3.23 27

$^{81}_{32}$Ge$_{49}$-6

γ(^{81}Ge) (continued)

E_γ [†]	I_γ [†c]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]3539.97 *14*	0.46 *5*					%Iγ=0.169 *21*
3665.54 *8*	2.96 *12*	3665.56	(7/2⁻)	0	(9/2⁺)	%Iγ=1.09 *8*
3697.95 *11*	1.68 *10*	3697.95	(7/2)	0	(9/2⁺)	%Iγ=0.62 *5*
3773.08 *18*	1.94 *17*	3772.88	(7/2⁻)	0	(9/2⁺)	%Iγ=0.71 *8*
4035.20 *7*	5.6 *4*	4035.31	(7/2⁻)	0	(9/2⁺)	%Iγ=2.06 *20*
4470.4 *2*	2.16 *16*	4470.53	(7/2⁻)	0	(9/2⁺)	%Iγ=0.79 *8*

† From 1980HoZN. Eγ and Iγ are also given in the level scheme in 1981Ho24 without their uncertainties. ΔE may be slightly underestimated, since many Eγ values fit poorly in the least-squares adjustment.

‡ Absent in table 9 (1980HoZN), but shown in drawing (1981Ho24).

\# Iγ from drawing (1981Ho24), Eγ from table 9 (1980HoZN); Iγ=2.46 *16* for doublet (1980HoZN).

@ Iγ from drawing (1981Ho24), Eγ from table 9 (1980HoZN); Iγ=1.86 *15* for doublet (1980HoZN).

& Eγ for this γ differs by 3σ or 4σ from least-squares adjusted value; the evaluator assumes that either the uncertainty given in 1980HoZN is underestimated or the γ is incorrectly placed in the decay scheme. Consequently, this Eγ was excluded from the least-squares energy adjustment for this decay scheme.

a Eγ is 6σ from least-squares adjusted value; evaluator, therefore, shows its placement as questionable here and excludes it from Adopted Gammas.

b Additional information 2.

c For absolute intensity per 100 decays, multiply by 0.367 *24*.

d Multiply placed with intensity suitably divided.

e Placement of transition in the level scheme is uncertain.

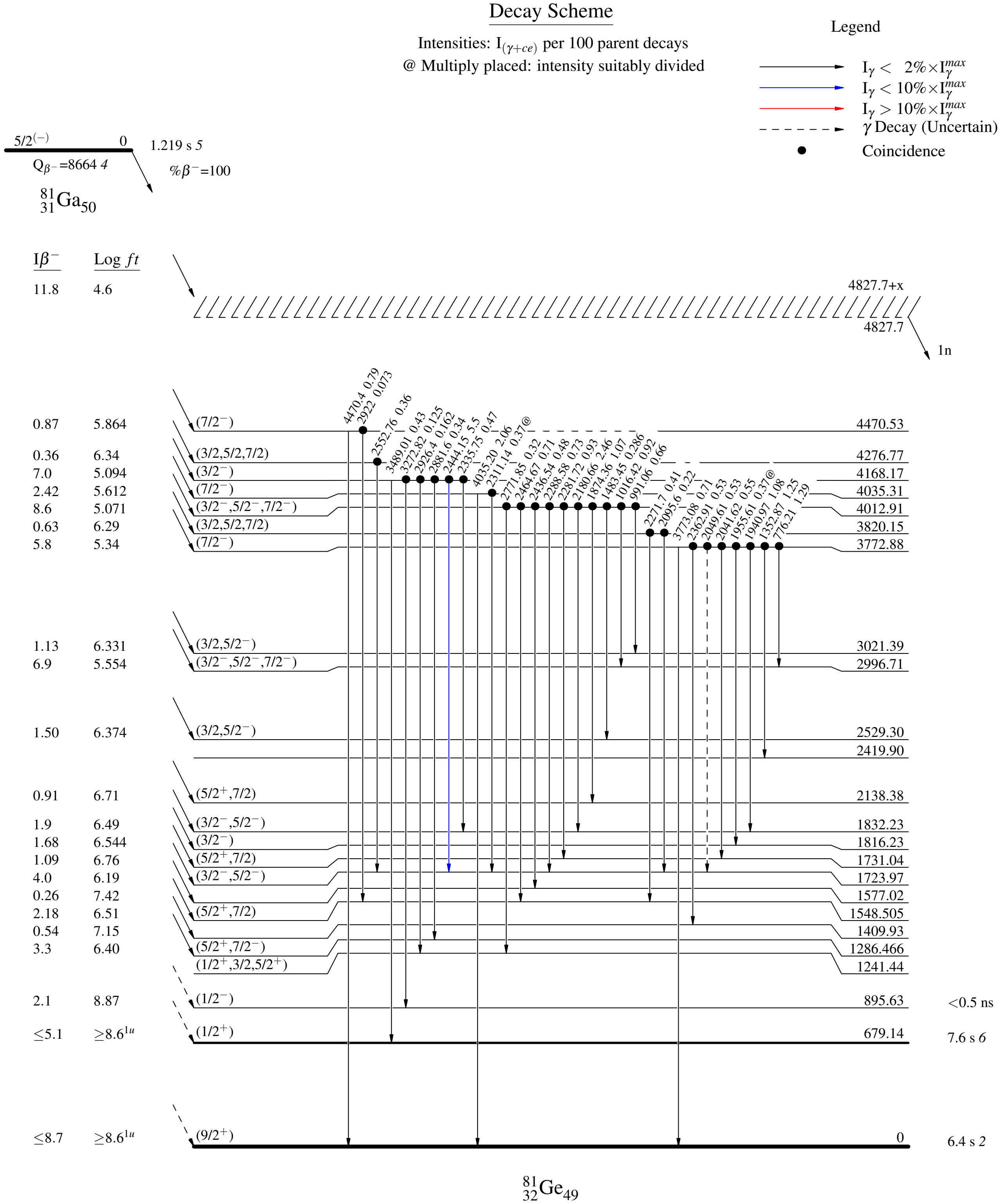
x γ ray not placed in level scheme.

$^{81}_{32}$Ge$_{49}$-7

^{81}Ga β^- decay (1.219 s) 1981Ho24

Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
@ Multiply placed: intensity suitably divided

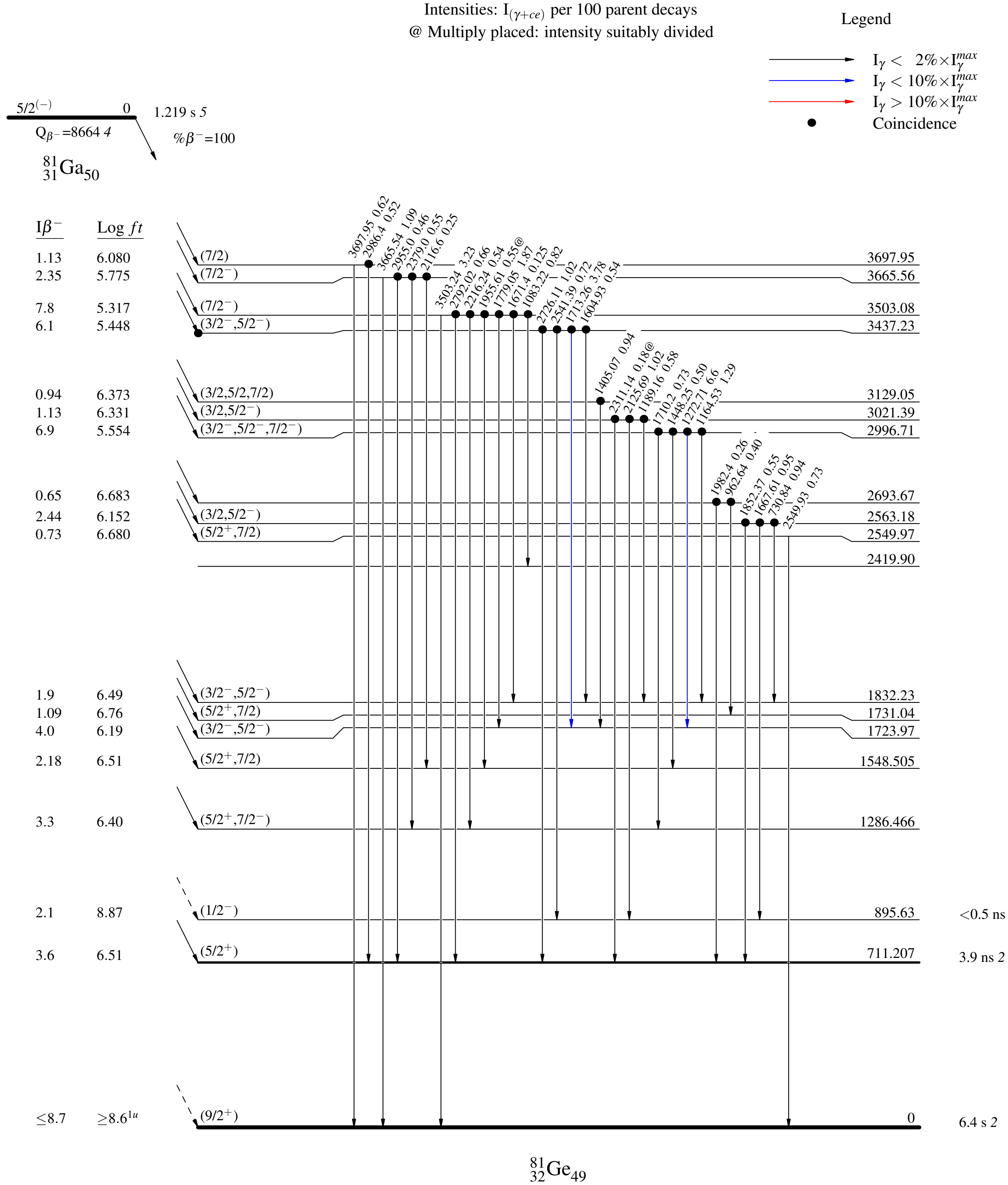


^{81}Ga β^- decay (1.219 s) 1981Ho24

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

@ Multiply placed: intensity suitably divided



^{81}Ga β^- decay (1.219 s) 1981Ho24

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
@ Multiply placed: intensity suitably divided

Legend